DEPARTMENT of ENVIRONMENTAL SERVICES
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	WILLEY POND, LITTLE	Lake Area (ha):	13.15
Town:	STRAFFORD	Maximum depth (m):	3.7
County:	Strafford	Mean depth (m):	1.9
River Basin:	Merrimack	Volume (m^3):	251000
Latitude:	43°17'31" N	Relative depth:	0.9
Longitude:	71°10'34" W	Shore configuration:	1.09
Elevation (ft):	830	Areal water load (m/yr):	5.38
Shore length (m):	1400	Flushing rate (yr^{-1}):	2.80
Watershed area (ha):	126.9	P retention coeff.:	0.64
% watershed ponded:	0.0	Lake type:	natural w/dam

BIOLOGICAL:		9 February 2000	22 July 1999
DOM. PHYTOPLANKTON (% TOTAL)	#1	MOUGEOTIA 98%	MOUGEOTIA 60%
	#2		DINOBRYON 15%
	#3		TABELLARIA 12%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			0.36
DOM. ZOOPLANKTON (% TOTAL)	#1	CALANOID COPEPOD 63%	NAUPLIUS LARVA 47%
	#2		CALANOID COPEPOD 36%
	#3		KERATELLA 17%
ROTIFERS/LITER		12	10
MICROCRUSTACEA/LITER		49	48
ZOOPLANKTON ABUNDANCE (#/L)		68	59
VASCULAR PLANT ABUNDANCE			Scat/Common
SECCHI DISK TRANSPARENCY (m)			3.7 Visible on bottom
BOTTOM DISSOLVED OXYGEN (mg/L)		13.8	7.4
BACTERIA (E. coli, #/100 ml)	#1		< 1
	#2		< 1
	#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None
Hypolimnion volume (m^3) : None
Anoxic volume (m^3) : None

CHEMICAL: Lake: WILLEY POND, LITTLE
Town: STRAFFORD

	9 February 2000		22 July 1999		
DEPTH (m)	1.0	2.0	1.0		2.0
pH (units)	4.6	4.7	4.6		4.5
A.N.C. (Alkalinity)	-0.8	-1.5	-1.0		-1.1
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN			0.10		0.20
TOTAL PHOSPHORUS	0.004	0.006	0.001		0.003
CONDUCTIVITY (µmhos/cm)	53.3	33.5	26.7		27.0
APPARENT COLOR (cpu)	9	10	< 5		< 5
MAGNESIUM			0.27		
CALCIUM			< 1.0		
SODIUM			1.3		
POTASSIUM			< 0.40		
CHLORIDE	< 2	< 2	< 2		< 2
SULFATE	6	6	7		6
TN : TP			100		67
CALCITE SATURATION INDEX					

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1999

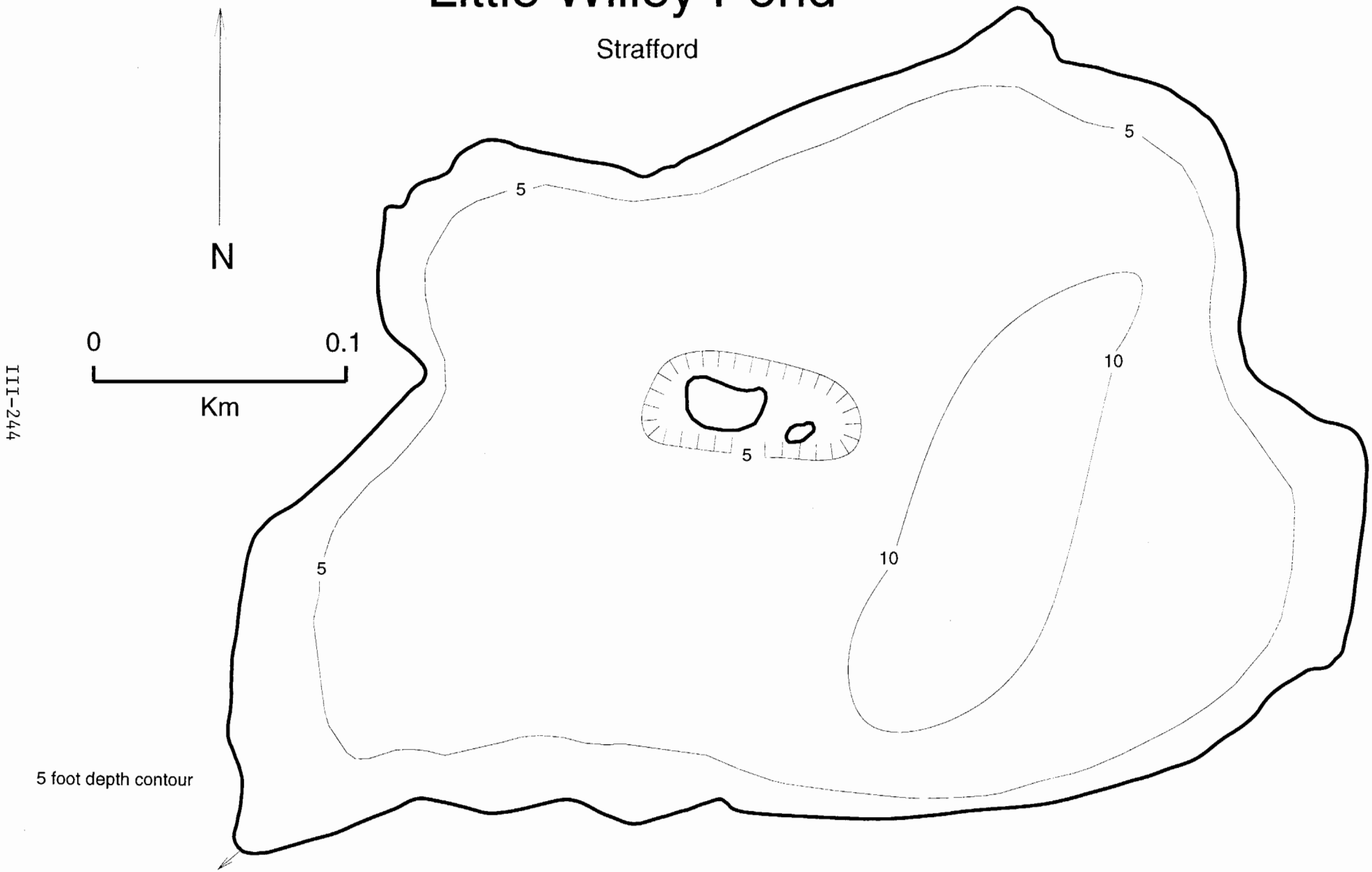
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	0	2	0	2	Oligo.

COMMENTS:

1. AKA Upper Willey Pond.
2. This pond was previously surveyed and classified in 1987. There was no change in classification or water quality between the two dates.
3. This is a very acidic and very clear water oligotrophic pond with negative buffering (ANC) capacity. This, along with Big Willey, is among the most acid of New Hampshire's clear water ponds.
4. Fragments of the filamentous alga *Mougeotia* were the dominant net phytoplankton (60%) but 13 other genera were observed (unlike in Big Willey where *Mougeotia* was the only genera present). Production was very low – chlorophyll was < 1 mg/m^3.

Little Willey Pond

Strafford



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FIELD DATA SHEET

LAKE: WILLEY POND, LITTLE TOWN: STRAFFORD
DATE: 07/22/1999 WEATHER: Sunny, Warm, Breezy

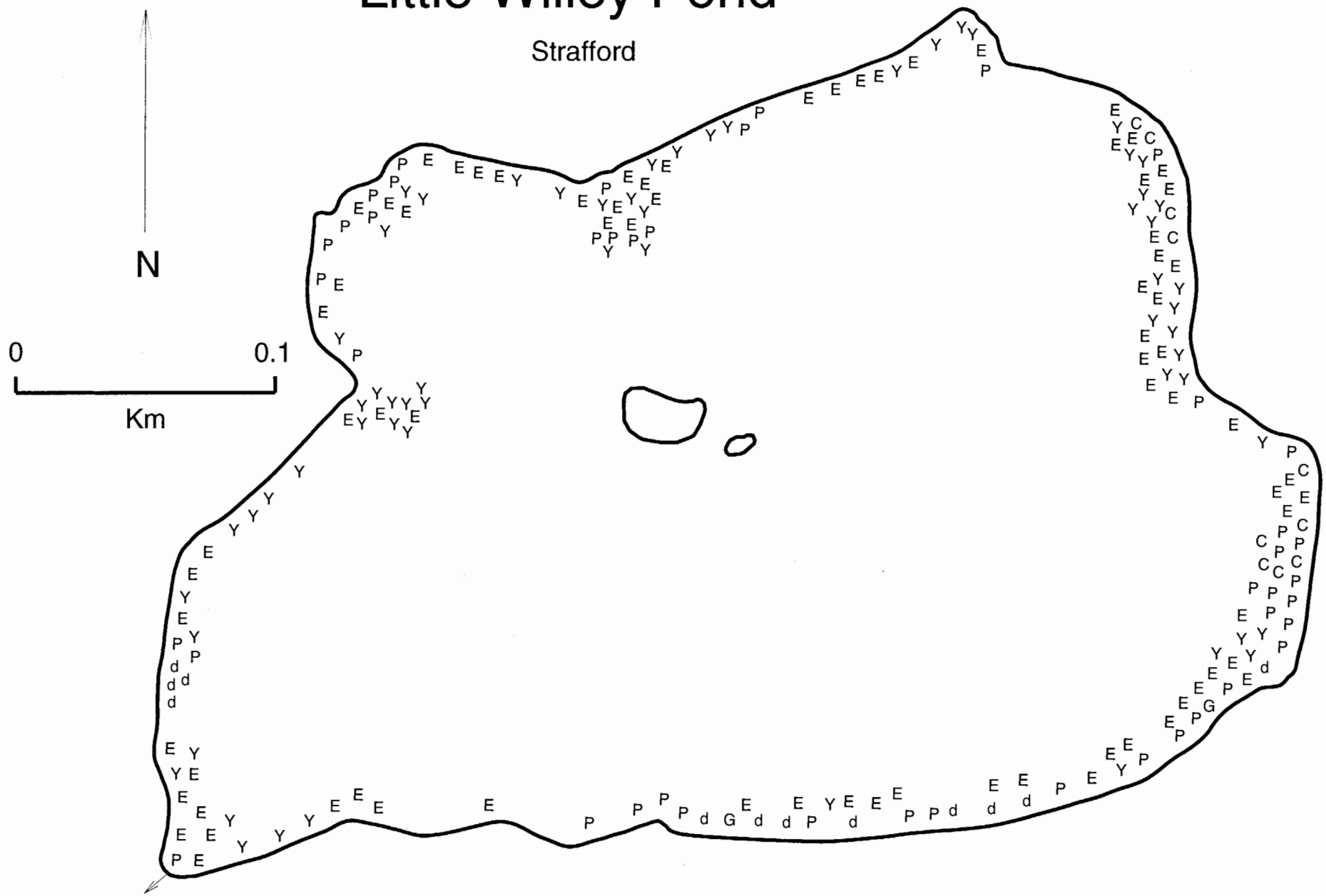
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	26.0	7.6	93 %
	1.0	25.9	7.5	92 %
	2.0	25.9	7.5	92 %
	3.0	25.9	7.5	92 %
	3.5	25.9	7.5	92 %

SECCHI DISK (m): 3.7 VOB COMMENTS:
BOTTOM DEPTH (m): 3.7
TIME: 1119

*Dissolved oxygen values are in mg/L

Little Willey Pond

Strafford



AQUATIC PLANT SURVEY

LAKE: WILLEY POND, LITTLE TOWN: STRAFFORD DATE: 07/22/1999

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Scattered
E	Eriocaulon septangulare	Pipewort	Common
d	Dulichium arundinaceum	Three-way sedge	Scattered
G	Gramineae	Grass family	Sparse
C	Carex	Sedge	Sparse
Y	Nuphar	Yellow water lily	Scat/Common

OVERALL ABUNDANCE: Scat/Common

GENERAL OBSERVATIONS:

1. The filamentous alga *Mougeotia* was abundant along the shoreline of the pond but is not listed above or depicted on the map. The presence of this alga is typical of acid-stressed ponds in New England.
2. The bottom appeared to be peaty.
3. A pickerel was observed swimming with its head above the water.